

On underside the marginal area of fore wing in male nearly as deep brown as the disk, with a thin grey submarginal line; in female the whitish submarginal shade of both wings more restricted than in *Delegorguei*, and the brown submarginal line more irregular, being slightly angulate below middle.

Natal and Grahamstown; several males and females in the Tring Museum and the British Museum.

21. *Ludia eximia*, sp. n.

Also closely resembling *L. Delegorguei*.

Body and wings more blackish brown; basal, costal, and outer marginal areas shaded with grey, not clay; submarginal line on both wings posteriorly a little less close to edge than in *Delegorguei*, the margin of fore wing densely shaded with blackish above and beneath; costal margin of hind wing longer than in *Delegorguei*, the wing being less triangular.

Ventral lobe of clasper (of male) short and blunt, the apical lobe rounded off, not produced into a thorn-like process.

Kampala, Uganda; one male in the Tring Museum.

II.—*A Contribution to the Knowledge of the Hymenoptera of the Oriental Zoological Region.* By P. CAMERON.

FOR the Indian species described in this paper I am indebted to Col. C. T. Bingham; those from Borneo were sent me by Mr. John Hewitt, the Curator of the Sarawak Museum. I have also described a few species taken by Col. Nurse in Baluchistan and Simla.

Braconidæ.

Iphiaulax Preyeri, sp. n.

Black; the head, antennal scape, thorax, and the four anterior legs red, the middle tibiæ and tarsi darker coloured; the wings fuscous, the nervures and stigma black; the head, metathorax, and legs covered densely with longish blackish pubescence, the ovipositor densely with stiff black hair; the first abdominal segment suffused with rufous, the raised central part almost smooth, the middle with a narrow keel down the centre; the second segment closely but not very strongly striated, the keel narrow, extending to the apex, the base with a small smooth triangular plate; the third is

striated at the base, and there is a triangular striated part on the sides, the apex extending to the base of the apical fourth; there is a keel down the middle of the basal three fourths. Temples as long as the top of the eyes, rounded behind, the occiput almost transverse. Face coarsely rugosely punctured. Antennal scape about three times longer than wide, of equal width, hardly as long as the second joint of flagellum, not hollowed below. Parapsidal furrows shallow. Recurrent nervure interstitial; the third abscissa of radius as long as the basal two united.

Length 10, terebra 17 mm.

Kuching; March (*John Hewitt*).

In size and form this species resembles *I. trichiothecus*, Cam.; the latter may be known by the third and fourth abdominal segments being striated. *I. extraneus*, Cam., has the same abdominal striation, but is a much larger and stouter species, and may be readily separated by the different form of the abdominal plate, which is much longer, gradually narrowed to a point near the middle of the segment.

Iphiaulax eriophorus, sp. n.

Black; the head (except the sides and top of front) and the vertex (except the sides behind, and the hinder central part more narrowly, which are black) dark rufous; the antennal flagellum black; the prothorax bright red; the depression bordering the basal plate of second abdominal segment, its apex broadly in the centre, narrowly on the sides, the centre of the third and fourth segments broadly at the base and apex, more narrowly in the middle, and the greater part of the ventral surface, rufo-testaceous. Median segment and breast thickly covered with white woolly pubescence, that on the latter shorter than on the former. The fore legs and the middle knees broadly rufo-testaceous. Wings hyaline, very iridescent, slightly tinged with fuscous; the costa, stigma, and nervures deep black. ♀.

Length 7, terebra 7 mm.

Kuching; October (*John Hewitt*).

Abdominal segments to near the apex of the fourth finely closely striated; the first segment broad at the base, raised, the sides depressed; the area on the base of second not very clearly defined, striated, narrowed gradually towards the apex, which extends to near the end of the segment; the surrounding parts are much more strongly striated; there is a curved furrow on the sides of the third segment and a transverse crenulated one on the apex. Face covered with white

pubescence, smooth; the oral region bordered laterally by deep wide furrows. There is a distinct malar space about two thirds as long as the antennal scape. Temples wide, only slightly narrowed behind. Parapsidal furrows narrow, deep, clearly defined, reaching from the base to the apex. The third abscissa of the radius fully as long as the basal two united; the recurrent nervure received distinctly before the transverse cubital.

Iphiaulax cosmiothecus, sp. n.

Black; the head, palpi, mandibles (except at apex), prothorax, mesothorax, and metathorax (except the sides of metanotum broadly) red; the fore legs red, darker at the apex. Wings uniformly fuscous violaceous; the second abscissa of radius longer than the third; the legs and sheaths of ovipositor densely covered with stiff black hair; the apex of the sheaths of the ovipositor with a broad band of white hair. On the apical three fourths of the raised part of the first abdominal segment are two stout parallel keels, forming almost a deep furrow; they are united near the base by a weak transverse keel; on the sides are two keels, the outer (and shorter one) commencing at the base, the other shortly beyond it; the basal half of the bordering furrows is stoutly closely striated; the second, third, and basal half of fourth segments are closely stoutly striated; the central keel on the second extends to the apex, it becoming gradually narrowed until it is more than twice longer than it is wide at the base, where it is smooth, the rest being closely longitudinally striated; the sides of the segment are smooth, shining, triangular; the central area on the outer side bears two irregular longitudinal keels; the inner sides bear a few irregular transverse ones. The first transverse furrow has the central third stoutly crenulated; on either side is a large smooth area, longer than wide, the inner side becoming gradually roundly curved from the base to the apex; there is a somewhat similar but smaller and semicircular area on the sides of the fourth segment. There is a smooth, raised, mitre-shaped space in the centre of the face; the sides are sparsely punctured, the punctures with hairs. The parts bordering the centre of the front are raised. Metanotum covered sparsely with long black hair. Temples nearly as long as the top of the eyes, rounded, not much narrowed behind. ♀.

Body 13, ovipositor 17 mm.

This species is not unlike *I. reticulatus*, Cam., which may

be separated from the present by the first abdominal segment being flat, not angled, it having also only a single narrow keel down the centre; the area on the base of second segment is an equilateral triangle, small, the fourth segment is striated to the apex, and the raised central part of the face forms a large triangle. The central lobe of mesonotum, too, is flatter, especially at the base.

Kuching, Borneo.

OPHIONINÆ.

Zachresta nigromaculata, sp. n.

Yellow, with the following black spots:—the ocelli, a large mark in the centre of occiput gradually obliquely widened below; a broad line on the basal two thirds of mesonotum in the centre, slightly dilated and rounded at the apex; a line on the sides, half in front and half behind the tegulæ, the two united at the scutellum by a transverse line; two semicircular marks on the base of metanotum; a mark below the tegulæ, narrow and square above, gradually roundly widened below, where it is transverse; an oblique mark, rounded at base and apex, on the mesopleuræ at the apex close to the sternum; a broad band on the narrowed base of postpetiole, a broad one on the middle of second segment, a triangular incision on its base, the apex transverse; the base of the others broadly, with a spot on their sides; and a mark on the middle of the third to fifth ventral segments. Antennæ black, the scape yellow below. Legs coloured like the body, a broad mark on the base of the hind coxæ below, the basal joint of the hind trochanters (except a narrow stripe in the middle above), a stripe on the outer side of the femora at the base, their base narrowly, and apex and the tarsi (except the basal half of the metatarsus), black. Wings hyaline, the nervures and stigma black; the arcolet minute, with a long pedicle, receiving the recurrent nervure in the apex; the transverse median nervure received clearly beyond the transverse basal; the radius and cubitus in hind wings very faint; the posterior nervures obsolete. ♀.

Length 9, terebra 1 mm.

Sikkim.

Tibiæ sparsely, the tarsi more thickly spinose; the calcaria long, about three fourths of the length of metatarsus. Head and thorax closely, somewhat strongly punctured and covered with white pubescence; the metanotum almost rugosely punctured; the apical slope with a broad depression in the

middle. First abdominal segment nearly as long as the second and third united, the apex distinctly dilated; the following segments are not compressed, distinctly broad compared with those of *Campoplex*.

I refer this species to *Zachresta* because the spurs, although longer than usual, are still distinctly shorter than the metatarsus; in the allied genus *Echthronomus*, Foer., they are described as "very long, scarcely shorter" than it. The only difference between this species and *Campoplex* of much importance lies in the abdomen not being strongly compressed, the latter genus having also the metanotum longer and more or less areolated.

Anomalon Binghami, sp. n.

Black; the face, clypens, mandibles, malar space, a broad line on the lower third of the inner orbits, tegulæ, and under-side of antennal scape lemon-yellow; the abdomen (except the top of the basal two segments) rufo-ferruginous; the four front legs fulvous, tinged with yellow, their coxæ and trochanters yellow; the hinder legs rufous, the coxæ and trochanters black above, the former broadly yellow in the middle below, the apical third of the tibiæ black; the apical joints of the tarsi tinged with yellow. Wings hyaline, tinged with fulvous, highly iridescent; the stigma testaceous, the costa and nervures black. ♂.

Length 22 mm.

Sikkim.

Head covered with white hair; the face strongly punctured, the punctures large, clearly separated; the front stoutly obliquely reticulated; the vertex strongly deeply punctured. Mesonotum strongly closely punctured, the punctures running more or less into each other, the apex stoutly transversely striated. Scutellum roughly reticulated, depressed broadly in the centre. Metanotum much more widely reticulated, slightly broadly depressed in the middle, as are also the metapleuræ. Propleuræ stoutly striated, obliquely above, longitudinally below; the upper part distinctly punctured. Mesopleuræ above longitudinally coarsely reticulated; the apex smooth, bare, below the reticulated part, the rest punctured, the punctures clearly separated, each having a black hair. Flagellum of antennæ rufo-testaceous, the basal half black above.

Allied to *A. tinctipenne*, Cam., from the Khasias. The present species may be known from it by the stoutly reticulated front: in *tinctipenne* it is striated rather than reticulated,

the keels, too, being much finer; the yellow mark on the inner orbits is obliquely narrowed above, not of uniform thickness, and there is a similar mark above it, which is not the case with the present species; the puncturation on the mesonotum is finer and closer and does not run into reticulations and striæ at the base; the transverse cubital nervure is as long as the basal abscissa of the cubitus, while in *tinctipenne* it is shorter than it.

PIMPLINÆ.

Rhyssa varilineata, sp. n.

Black, with the following yellow spots:—underside of scape, face, the orbits broadly (except on top), apex of pronotum (its sides more narrowly), scutellar keels, scutellum (except at apex), median segment (except round the edges), tubercles, an irregular spot below them, a smaller line under hind wings, a line down the centre of first abdominal segment (narrowed in the middle, the apex wider than the base), a broader line on the apical three fourths of the second (its apex rounded and dilated), a continuous line near the apex of the third, an interrupted one on the fourth and fifth, and a narrower obscure one on the sixth. Legs yellow, the four anterior coxæ above, the hinder (except for a broad band above), the greater part of the femora behind and the posterior in front in the middle, the base of the four front tibiae, the posterior to beyond the middle, and the tarsi, black. Wings hyaline, iridescent, the stigma testaceous, the nervures black; a squarish cloud at the end of the stigma, extending shortly beyond the areolet. ♀.

Length 13, ovipositor 12 mm.

Kuching; September (*John Hewitt*).

Smooth, except the striated mesonotum and the scutellum, which is punctured. Pedicle of areolet as long as the straight basal branch. Clypeus narrowed obliquely, testaceous, its middle dilated, almost toothed.

This is the smallest Malay species known. It is near to *maculipennis*, Smith, which may be separated from it, apart from its much larger size, by the much larger alar cloud, which extends beyond the cubitus, and by the metanotum having three separated yellow spots on the apex, the rest being black.

Rhyssa claripennis, sp. n.

Black; the head (except the centre of front), the vertex

and occiput, the mesonotum (except for two lines, rounded on inner side, in the centre), scutellum (except at apex), postscutellum, the keels, metanotum, the pleuræ (except the propleuræ broadly in the centre), the first abdominal segment broadly in the centre, a narrower stripe down the middle of the second (widest at the apex, not touching the base or apex of the segment), and transverse lines before the apices of the others, the apical two interrupted, and the ventral surface, pale yellow. Legs pale yellow, the fore femora behind, the middle above on the apical two thirds, the posterior entirely above, the base of the tibiæ, and the tarsi black. Wings hyaline, the costa and nervures black, the stigma fulvous; pedicle of areolet shorter than lower branches, the recurrent nervure interstitial. ♀.

Length 18, terebra 21 mm.

Kuching; November (*John Hewitt*).

Face closely but not coarsely punctured, thickly covered with short white pubescence. Basal and apical slopes of mesonotum smooth; the striation strongest in front. Clypeus depressed, yellow tinged with rufous.

May be known from the described Indo-Malay and Indian species by the immaculate wings.

Epirhyssa nigrobalteata, Cam.

The markings on this Bornean species vary somewhat, *e. g.* the yellow mark on the mesonotum may be longer than wide, with a triangular incision on the apex.

Epirhyssa curvimaculata, sp. n.

Black; the face, clypeus, inner orbits to the ocelli, the outer narrowly above, broadly below, prothorax (except for a broad band on the pleuræ), a pyriform spot on the sides of middle lobe of mesonotum, a longer one on the inner side of the lateral lobes of mesonotum, straight on outer side, rounded on inner and produced into a sharp point at the apex, scutellar keels, basal two thirds of scutellum, metanotum (except for a semicircular mark on apical half), an oblong mark below the tegulæ, united to an oblique large mark below it, extending from the base to the apex, the metapleuræ (except at the base, the black basal spot having the part above the keel larger than that below it), broad bands (rounded at the base) on the basal two abdominal segments, the lines on the following three broad and curved backwards in the middle, those on the following two broad, curved and widely interrupted in the middle, and the basal ventral segments, pale

yellow. Legs pale yellow, the inner side of the four hinder coxæ, the lower side of the posterior, base of four hinder trochanters, the four hinder femora broadly above, the hinder two also in the middle below, base of tibiæ and the tarsi, black. Wings hyaline, a large fuscous-violaceous cloud at the apex, commencing shortly beyond the transverse cubital nervure and extending to the end of the radial cellule. ♀.

Length 15, ovipositor 28 mm.

Kuching; September (*John Hewitt*).

Face smooth, finely obscurely striated above; the striæ on apical central part of mesonotum much finer and closer than on the rest. Basal half of scutellum closely punctured, as are also (but more finely) the middle segments of the abdomen.

In the male the meso- and metapleuræ are yellow, without black, as is also the breast, the black on first abdominal segment is transverse at the apex, the bands are broader, and the apical segments are reddish brown; the black on the legs is less extended and the apical cloud in the fore wings is small, not extending to the cubitus.

This species comes near to *E. (Macrogaster) flavopictus*, Sm., described from Singapore by Smith and from Borneo by Tosquinet (*Mém. de la Soc. ent. de Belg.* 1903, p. 258). It is a much larger species (25 mm. according to Tosquinet, 15 lines according to Smith). *Macrogaster*, Brullé, does not belong to the Pimplinæ; *Ctenotoma*, Cam., is probably the same. It is purely African, so far as I know.

Epirhyssa cruciata, sp. n.

Black; the apex of the second and the following abdominal segments reddish brown; the face, clypeus, inner orbits to near the end of the ocelli, the outer (except for a broad stripe in the centre of upper third), a large mark (dilated broadly at the apex below) on propleuræ, two small oval spots on the centre of mesonotum at the base, two larger ones (roundly narrowed on the inner side) at the end of the basal lobe, a square mark on the sides of the scutellum at the base, a longer narrower line on the sides of the apex (leaving a black cruciform mark in the centre), a broad curved band on the metanotum near the apex uniting with the yellow on metapleuræ which occupies almost the whole surface, the tubercles, the mesopleuræ (except round the edges and a large oblique mark, narrowed above, near the centre below), a large triangular mark on the sides of mesosternum, a longish line (dilated at the apex) in the centre of apical three fourths of

first abdominal segment, a mark (roundly narrowed behind) near the apex of the second, a curved line shortly beyond the middle of the third, two oblique lines in the centre of fourth, two more widely separated curved ones on the fifth, and more or less of the ventral surface, yellow. Legs yellow, the four anterior femora broadly dark rufous above, the hinder pair of a darker rufous on the inner and outer side; the four hind tibiæ broadly black at the base above, the apex black all round, and the four hind tarsi black. Wings hyaline, the apex lightly smoky, the costa and nervures black, the stigma rufo-testaceous; the recurrent nervure interstitial. ♂.

Length 18 mm.

Kuching; January (*Hewitt*).

Face closely distinctly punctured and thickly covered with white pubescence, the front and vertex smooth. Underside of antennal scape yellow. Mesonotum striated throughout, but more weakly towards the apex. Base of scutellum strongly, the apex more finely and closely striated. Metanotum closely punctured, the punctures clearly separated; at the end of the central furrow are three or four stout curved striæ.

Epirhyssa lineatiscutis, sp. n.

Length 15 mm. ♂.

Kuching; September (*Hewitt*).

This species is very similar to *E. cruciata*, described above; the two may be separated thus:

Mesosternum entirely black: mesopleuræ black with a large curved yellow mark below the tubercles and a smaller, triangular one at the apex below; the mark on first abdominal segment not much longer than it is wide at the apex, narrowed at the base, that on the second triangular, as long as the width at the apex, the lines on the third and fourth wide, not curved, continuous	<i>lineatiscutis</i> .
Mesosternum black, except for a triangular lateral spot; mesopleuræ yellow, with an oblique black mark at the base; the mark on first abdominal segment long, narrow, on the second narrow, transverse, the lines on the third and fourth narrow, not continuous ..	<i>cruciata</i> .

The legs are more largely suffused with rufous than in *cruciata*, the four hind tibiæ much darker coloured, the hind coxæ black, yellow above, the line down the centre of scutellum is narrower than the apical which curves round the apex, the black band on base of metanotum occupies the basal fourth and is of equal width, the curved black apical mark is wider at the apex than it is long, the metapleuræ

black round the base, apex, and lower edge ; the four lines on mesonotum are longish, narrow. Basal three segments black, except for the yellow marks, the others brownish red. Except that the black line uniting the eyes with the black on vertex is wider, the head is coloured as in *cruciata*. As in that species, the apex of the wings is narrowly smoky. The yellow transverse lines on the third, fourth, and fifth segments are wide, that on the third dilated in the middle at the base.

Xanthopimpla lissonota, sp. n.

Pale yellow, a triangular mark covering the ocelli, a semi-circular mark, the rounded narrowed end at the apex, on the centre of middle lobe of mesonotum, a mark widened in the middle at the base of scutellum, a minute spot on either side of the base of metanotum in the lateral areæ, and two spots on the seven basal abdominal segments, those on the first produced into a narrowed line at the base, a mark on the outer and inner side of the trochanters, and a line on the base of the hinder tibiæ, black ; the basal joint of the hind tarsi and the apical two infuscated. Wings hyaline, the apex slightly smoky, the nervures and stigma black ; the areolet small, shortly appendiculated. Flagellum black. ♂.

Length 7 mm.

Kuching ; November (*Hewitt*).

Areola wider than long, six-angled, the apical keel almost rounded ; the lateral areæ widened gradually in the middle almost to a point ; the sides slightly angled in the middle, from which a keel runs towards the apex. Mesonotum smooth, shining ; the furrows short, on basal slope only. Except the third to seventh abdominal segments the body is impunctate ; the puncturation on the abdomen becomes gradually weaker. Marks on second abdominal segment small, irregular, on the third irregularly round, on the others wider than long, transverse. Face equally roundly convex, closely punctured, squarish.

Agrees best with Krieger's section G (*cf.* Ber. d. naturf. Gesel. z. Leipzig, 1897-8, p. 92).

Echthrus maculiceps, sp. n.

Black ; face (except for a line over the clypeus, dilated at the sides above), clypeus, labrum, base of mandibles, a line round the orbits, broadest on the front, palpi, two oblique marks in the centre of the occiput, base of pronotum, a broad line, narrowed in front, on the sides, an irregular squarish

mark in the centre of the propleuræ below, a longish oval mark on the apex of the middle lobe of mesonotum, tegulæ, scutellum (except at apex), a small spot on the sides near the apex of the yellow part and united to it, scutellar keels, a band on the base of metanotum, the black bordering its apex, 4-lobate, a large trilobate mark on apex, the central lobe projecting backwards, smaller than the others, its base incised in the middle, the sides rounded, a broad large mark, the base roundly dilated, the apex straight, produced posteriorly below, this part being also produced backwards as a broad line to near the apex of the basal third on mesopleuræ, the centre of mesosternum broadly, the mark widened towards the apex and with a black mark in the middle of the apex, a small mark under the hind wings, a large one almost covering the metapleuræ, a broad mark on the apex of the first abdominal segment, its basal half narrowed, rounded and incised at the centre, narrower lines, dilated laterally, on the apices of the second to sixth, the seventh (except for a large trilobate mark), the apical lobe square, larger than the lateral, and the ventral surface (except the first and large marks on the following three segments), pale yellow. Antennæ broadly (sixth to twelfth joints) ringed with white. Legs yellow, the anterior paler, the hinder femora fulvous; a spot on the outer apical side of the four anterior, the posterior below and broadly at the apex all round, a line on the trochanters, on the four anterior femora, the apex of the hind femora narrowly, the base of the hind tibiæ slightly more broadly, the apex of the hind tibiæ more broadly, and the apical joint of the tarsi, black. Wings hyaline, the nervures and stigma black.

Length 19, terebra 5 mm.

Quop, Sarawak; November (*Hewitt*).

Closely punctured, densely covered with short white pubescence; the mesopleuræ at the base closely striated; the depressed apex of middle lobe finely longitudinally striated. Base of metanotum behind the keel closely, somewhat strongly striated, the part between the two keels stoutly closely striated in the middle, the sides closely reticulated, the apex much more strongly striated, the striæ curved; the basal keel curved backwards in the middle, the apical stouter, not curved in the middle. Parapsidal furrows distinct, narrow, deep. The first abdominal segment broadly smooth in the centre of narrowed basal part, this smooth line bifurcating on the widened apex; the punctures on the segment are stronger and more widely separated than on the rest of the abdomen. Areolet as long as it is wide at the base,

the apex slightly narrower than the base, through the cubitus turning slightly upwards from the recurrent nervure. The transverse basal nervure is received considerably in front of transverse median.

TRYPHONINÆ.

Fovaya spinipes, sp. n.

Black, the second, third, and fourth abdominal segments red, the fourth with the apex narrowly black; the antennæ with the thirteenth to twentieth joints white; legs black, the greater part of the fore femora and all the tibiæ reddish; the anterior tarsi testaceous, the four apical joints black above; the basal two joints of the middle tarsi testaceous, the third whitish, the apical black; the basal joint of the posterior tarsi black, testaceous at the base, the second to fourth white, the fifth black. Wings hyaline, the nervures and stigma black; the areolet shortly appendiculated, the basal nervure straight, oblique, the apical rounded, the recurrent nervure received near the apex. ♀.

Length 11 mm.

Simla.

Head and thorax alutaceous, opaque, covered with a pale down; the lower half of the clypeus shining, somewhat strongly, but not closely punctured. Apical half of mesopleuræ smooth and shining above. On the apex of the metanotum are three areæ longer than wide, the central larger than the lateral and all rounded above; leading from the base to the central area are two keels which curve inwardly before the middle, the apical half of the area being wider than the basal. The anterior tibiæ sparsely, the four posterior thickly spinose.

This species may be known from *F. annulitarsis*, Cam., the type of the genus (it is also from Simla) thus:—

Clypeus, lower inner orbits, and a spot on the sides of mesonotum at the base pale yellow; flagellum brownish beneath before the white band; second abdominal segment black, red at the base, the inner keel of spiracular area distinct; the four hind femora testaceous..... *annulitarsis*.

Clypeus, lower inner orbits, and base of mesonotum entirely black; flagellum black before the white band; second abdominal segment red, the inner keel of spiracular area indistinct; the four hind femora black..... *spinipes*.

CRYPTINÆ.

Silsila striolata, sp. n.

Black, a broad band on the centre of the flagellum, face, clypeus, mandibles, palpi, a narrow line on the upper inner orbits, a line on the upper, a broader one on the lower edge of prothorax, the line on the top, narrowed behind, scutellums, scutellar keels, a large, broad, triangular mark behind the hind wings, the apical slope of metanotum, except in the centre, the mark in the centre continued upwards to near the transverse keel, this part becoming gradually narrowed, from its outer edge at the apex a line of equal width runs along the edge of the pleuræ to near the spiracles and below along the coxæ, a broad curved mark on the lower edge of the mesopleuræ, the base being narrower and continued higher up than the apical, and lines of equal width on the apices of the abdominal segments, pale yellow. Four front legs pale fulvous, paler at the base; the fulvous tint on the hind legs is deeper, the lower and outer side of their coxæ, the apical joint of the trochanters, the apex of the femora narrowly, and the base of the tibiæ still more narrowly, black. Wings hyaline, the nervures and stigma black. ♂.

Length 12 mm.

Bidi, Borneo; July (*Hewitt*).

Face, except on the outer edges, closely, roughly punctured, the clypeus smooth. Front stoutly, obliquely striated below the ocelli, the lower part furrowed down the centre. The yellow projecting part of the pronotum stoutly striated; the upper part of the propleuræ irregularly, finely striated and punctured; the middle stoutly striated. Mesonotum closely, distinctly punctured, finely striated on the edges of the lobes; the scutellum smooth, its basal depression deep with four stout keels; the mesopleuræ stoutly striated, except in the middle at the apex. On the base of the metanotum is a band of stout striæ, closely pressed, but clearly separated; the space between them and the keel is, in the middle, coarsely, closely shagreened, almost punctured; the sides have the punctures clearly separated. Metapleuræ closely, rugosely punctured, the punctures running into reticulations, especially at the base. The first abdominal segment smooth and shining, the others opaque, aciculated.

Mesostenoides cariniscutis, sp. n.

Black; a line on the inner orbits, a mark, longer than wide, narrowed above, transverse at the apex, in the centre

of the face, two large marks, almost united above, in the centre of the clypeus, the apex of the labrum, an irregular line on the base of the pronotum, tegulæ, tubercles, scutellums, scutellar keels, metanotal spines, and the apices of the abdominal segments, yellow; the four front legs yellow, the femora tinged with fulvous, their tarsi fuscous; the hind coxæ and basal two thirds of the femora fulvous, the trochanters, apex of femora, and almost the apical half of the tibiæ, black; the basal part of the tibiæ testaceous, the tarsi white. Antennæ broadly ringed with white. Wings hyaline, the stigma and nervures black, the areolet square; the transverse median nervure received distinctly behind the transverse basal. ♀.

Length 12, terebra 2 mm.

Sikkim.

Front irregularly transversely striated, the striæ weaker below; a narrow keel down the middle. Face finely, irregularly reticulated, the clypeus with large scattered punctures. Mesonotum closely minutely punctured. Scutellum with large lateral keels to near the apex. Base of metanotum finely, closely, longitudinally striated, the striæ becoming stronger towards the apex; the rest closely, strongly reticulated; spines broad, rounded at apex. Abdomen finely, closely punctured, the postscutellum smooth.

Mesostenus respondens, Cam., *M. brahminus*, Cam., *M. missippus*, Cam., *M. clarinervis*, Cam., *M. reticulatus*, Cam., *M. caligatus*, Cam., *M. saltator*, Cam., *M. versatilis*, Cam., and *M. maculiceps*, Cam., from the Khasias, belong to *Mesostenoides*.

Friona lineatipes, sp. n.

Black; the face (except for a short line in the centre below the antennæ and the clypeal fovea), the clypeus (except for a black triangular mark in the centre of apex), the orbits broadly (except the upper half of the outer), mandibles (except the teeth), palpi, a broad line on the pronotum, scutellums, a large, transverse, triangular mark behind the hind wings, a broad longitudinal mark on the middle of metanotum, commencing shortly behind the keel and uniting at the apex to a broader transverse one across the apex, tubercles, a line at the apex of the pleural furrow, a longish mark, widest below, in the middle of the metapleuræ at the apex, not quite the apical half of the postpetiole, a narrower band on the apex of the second segment, a still narrower one on the apex of the third, slightly dilated at the middle, broadly laterally,

where it is continued on the sides to the base of the segment, a similar, but narrower and more irregular line on the fourth, not dilated in the middle, a narrower one, interrupted in the middle, on the fifth, and the sides and middle of the apical two broadly, yellow. Four front legs pale yellow, the femora tinged with fulvous, the middle tarsi infuscated; hind coxæ black, with a yellow mark above, extending from the base to shortly beyond the middle; the trochanters fulvous, the basal joint black at the base below and entirely above; the femora fulvous, broadly black above, more narrowly below; the tibiæ yellow, tinged with fulvous, the base narrowly, the apex more broadly black; the tarsi white with a narrow black line at the base. Wings hyaline, the stigma and nervures black. Antennæ broadly ringed with white. ♀.

Length 13, terebra 5 mm.

Darjiling, 7000 feet; March (*C. T. Bingham*).

Front with a weak, straight, central, and three oblique keels on either side, the inner oblique one weaker than the outer two, the outer keel originating from the hind ocelli; below, the front is depressed; the keels are weaker in the depression. Mesonotum smooth, the apex of its middle lobe stoutly, metanotum closely, rugosely reticulated; the space between the keels stoutly, longitudinally striated; on the sides the striæ run into reticulations; the basal keel is not very distinct, being confused with the puncturation; there is a slight indication of an areola at the base; the second keel is distinct, broadly roundly curved, dilated laterally. Basal slope of scutellum with large, clearly separated punctures, the top is more closely punctured, the punctures running into each other; it is depressed in the middle at the apex; the apical slope closely, strongly punctured. Metanotum behind the keel closely, strongly transversely striated. Pro- and mesopleuræ stoutly longitudinally striated; the mesopleuræ smooth in the middle behind and more or less reticulated below; the metapleuræ stoutly obliquely striated, except for an almost smooth space at the base. The recurrent nervure is received shortly beyond the middle. Pubescence on thorax not very dense and pale in colour.

This species comes near *F. frontella*, Cam., and the Malay *F. varipes*, Cam.

Cratocryptus annulitarsis, sp. n.

Black; a semicircular mark on the sides of the face touching the eyes, a square mark in its centre, touching the

clypeus, the clypeus, a broad curved line on the inner orbits, commencing shortly above the antennæ and extending above to the end of the eyes, a longish triangular mark (the narrowed end above) on the outer orbits, commencing shortly below the middle and reaching near to the middle of the malar space, a broad mark on the base of the mandibles, palpi, a broad line on the middle of pronotum, a line on the lower edge of propleuræ, tubercles, tegulæ, a line on scutellar keels, scutellum, a broad, large mark, roundly narrowed below, on the sides of metanotum on apical slope, and the apices of the abdominal segments (the lines on the basal three broad, narrower on the others), pale yellow. The seventh to thirteenth joints of antennæ white, except above. Legs red, the hinder darker in tint, the tarsi black, the second and third joints of the posterior white; the four anterior coxæ and trochanters yellow; the hind coxæ (except broadly on the inner side, where they are yellow, as they are also at the apex below), the apex of femora narrowly, and the base and apex of tibiæ slightly more broadly, black. Wings hyaline, the stigma and nervures black. ♀.

Length 10, terebra 2 mm.

Sikkim.

Face rugosely punctured, more or less reticulated in the centre; the clypeus strongly, sparsely punctured. Front in the centre, to the apical depression, strongly striated, the striæ intermixing; it is longitudinally striated above, transverse below. Mesonotum closely, finely punctured, irregularly transversely striated along the furrows. Scutellar depression wide and deep; there are four stout keels on it. Metanotum behind the keel stoutly, longitudinally striated; the rest stoutly, closely reticulated. Pleuræ closely, rugosely reticulated; the greater part of the propleuræ stoutly striated. The first and the apical segments of the abdomen smooth; the middle closely punctured. Areolet wider along the radius than along the transverse cubital nervures, of almost equal width; the recurrent nervure is received shortly beyond the middle.

This species has the general coloration (including the marks on the face) of *C. rufipes*, Cam., from Deesa, but is much larger; they may be separated as follows:—

- | | |
|---|-----------------------|
| Base of metanotum punctured, with an areola; the post-petiole strongly punctured; meso- and metapleuræ with yellow marks; hind coxæ red; the hind tarsi not maculate with white | <i>rufipes</i> . |
| Base of metanotum striated, without an areola; the post-petiole smooth; meso- and metapleuræ immaculate; the hind coxæ black and yellow, the hind tarsi maculate with white | <i>annulitarsis</i> . |

Colganta latiscutis, sp. n.

Rufo-fulvous ; the basal six joints of antennæ coloured like the body, the seventh to twelfth pale yellow, the apical black ; the apical joint of the middle tarsi, the apical two of the hinder as well as the base of the second and third joints of the hind pair black. Wings hyaline, highly iridescent, suffused with brassy tints ; the costa and stigma dark testaceous, the nervures black. Median segment closely rugosely punctured-striated-reticulated ; the two basal keels are irregular ; the basal abscissa weaker than the apical, its basal part straight, the apical longer, weaker, and roundly curved outwardly. Eye-orbits broadly pale yellow ; the front in the middle closely rugosely punctured, raised, obliquely narrowed to a point below. Temples almost obsolete, the eyes above extending to the extreme edge, below they are abruptly obliquely narrowed ; the margined edge of occiput is placed low down below the top of the eyes. Pro- and mesopleuræ closely distinctly punctured. Scutellum closely strongly punctured, thickly covered with longish black hair ; the lateral keels extend to the middle. Mandibles pale yellow, the apex from shortly behind the teeth black. Centre of face slightly raised, of equal thickness, not tuberculate above. Scutellum broad, rounded at the apex, which has a longish, steep, vertical slope.

Length 17, terebra 3 mm.

Sikkim.

May be known from *C. fulvipennis*, Cam., by the middle of the antennæ being clear yellow, the antennæ being distinctly three-coloured, by the temples being much less developed above and more sharply oblique, by the shorter ovipositor, and by the difference in the metanotal keels : in *fulvipennis* the inner keel is straight, the apical slightly rounded backwards in the middle and obliquely sloped ; there is a distinct outer keel inside the spiracles, it having the basal two thirds roundly curved inwardly, the lower third straight ; in the present species there is no outer keel and the inner is broadly roundly curved. The difference in the form of the scutellum is well marked ; in *fulvipennis* it is clearly longer than wide and becomes distinctly narrowed towards the apex, with a gradual, short, not a vertical slope.

APHADNUS, gen. nov.

Arcolet entirely open at apex, the only transverse cubitus

short, the recurrent nervure widely distant from it, the cubitus between it and the transverse cubitus sharply obliquely sloped. Antennæ 30-jointed, basal three joints of flagellum greatly elongated, the basal two of equal length. Transverse median nervure in hind wings broken below the middle. Hind ocelli separated from the eyes by a greater distance than they are from each other. Eyes very large, the temples very short, the occiput roundly deeply incised. Metanotum with three central areae, the petiolar a longish triangle, the areola longish, 6-angled, obliquely narrowed at the base, the apex transverse; the apical area occupying the apical slope; there are two large lateral basal areae; spiracles small, not much longer than wide, broadly rounded before and behind. First abdominal segment large, longer than it is wide at the base; the first, second, third, and base of fourth segments closely, regularly, longitudinally striated.

The antennæ are as long as the body, slender, ringed with white; the wings are spotted. Parapsidal furrows distinct, complete, the metathorax densely covered with long pubescence. Radial cellule wide near the middle; radius issuing from middle of stigma, its first abscissa shorter than second. Eyes higher than the vertex.

This genus cannot be confounded with any of the known genera of Hemitellinæ wanting the areolet. The first abdominal segment is shorter and wider than usual; noteworthy are the striated basal abdominal segments.

Aphadnus rufipes, sp. n.

Black; tegulae, a broad band on the apex of the first abdominal segment, a stripe in the centre of the apex of the second, apical half of fourth, an obscure broken narrow line on fifth, and a narrow complete one on sixth, whitish yellow. Legs bright red, the four anterior coxae, the base of hind tibiae behind, and the hind spurs white; the rest of the hind tibiae and the tarsi black. Wings hyaline, a cloud (rounded and narrowed in front) before the apex of transverse basal and transverse median nervure, extending slightly beyond the latter, a large one extending from the base to near the apex of radial cellule, its lower half projecting backwards along the discocubital nervure, and one in the apical fourth of hind wings, almost black; the nervures and stigma black. Head opaque, closely punctured, densely covered with white pubescence, as are also the pleurae and metanotum. Face and clypeus dilated in the centre. Middle lobe of mesonotum somewhat

strongly and closely striated, the outer and inner edges of the lateral more finely striated, their centre opaque, alutaceous. Base of metanotum irregularly transversely striated, more finely and closely on the inner side at the base, the apical striæ interlacing, the apical slope more strongly, obliquely, and transversely striated, the striæ more or less interlacing. Except on the smooth apex the basal segment of abdomen is closely finely striated, as is also the basal half of the fourth; the striation on the second and third is stronger. Abdomen as wide as the thorax and slightly longer than the head and thorax united. ♀.

Length 7, terebra 2 mm.

Kuching; September (*J. Hewitt*).

ICHNEUMONINÆ.

Imeria levifrons, sp. n.

Black; the entire head smooth, shining; the mesonotum opaque, closely irregularly striated; the propleuræ almost smooth; the mesopleuræ smooth at the apex above, the rest closely longitudinally striated, the striæ more or less twisted; the metapleuræ smooth at the base and below, the rest more or less striated; the metanotum (except the enclosed space at the base) closely reticulated, more or less striated; the abdomen less shining than the thorax. The following are pale yellow: face, clypeus, mandibles, palpi, a spot outside the lower part of the eyes, the upper inner orbits somewhat broadly from the antennæ to the ocelli; a large broad oblique mark, obliquely narrowed on the outer side, behind the top of the eyes; a small irregular mark outside the lower edge of the eyes. Base of pronotum, a line on the apical half of the sides above, tubercles, scutellum, apical slope of metanotum, the mark roundly dilated above in the middle, a large elongated triangular mark below the hind wings, a line about the same length on the lower apical half of the apex of metapleuræ, its base roundly narrowed, the apex of the first abdominal segment broadly, a mark on the apex of the second and base of third, forming united a triangular lateral mark, narrow lines on the apices of the third to sixth all round, and the seventh broadly, whitish yellow. Four front legs whitish yellow, the femora tinged with fulvous, the hinder yellow, the femora and tibiæ broadly black, the tarsi fuscous; the coxæ black, rufous at the base. Wings hyaline, the nervures and stigma black. ♀.

Length 7 mm.

Kuching; September (*John Hewitt*).

Antennæ longer than the body, the fourth to eighteenth joints of the flagellum white. Ovipositor-sheath largely projecting, as long as the apical two joints united. Apex of scutellum slightly rounded inwardly, the lateral keels of equal height. Areolet 5-angled, the nervures clearly separated in front. Apex of abdomen becoming gradually narrowed from the middle. Transverse keels on metanotum indistinct.

Imeria, Cam., was described from the Khasia Hills, Assam, in Ann. & Mag. Nat. Hist. xi. (7) 1903, p. 174. Its occurrence in Borneo is another proof that Assam belongs to the Indo-Malay zoological region rather than to the Indian. It has a considerable resemblance in the form of the head and abdomen to *Aulojoppa*, Cam., but that genus has longitudinal as well as transverse keels on the metanotum. *Imeria* has only transverse keels.

ALLONOTUS, gen. nov.

Antennæ ringed with white, broadly dilated as in the Joppini. Clypeus clearly separated, raised in the middle above, the sides above bordered by a furrow. Mesonotum with distinct parapsidal furrows on the basal half, the basal half of the mesosternum bordered by a distinct, if narrow, furrow. Scutellum keeled laterally to the top of the apex, which has a longish oblique slope. Metanotum regularly areolated; the areola widely distant from the base, longish triangular, the narrowed end at the base; there is no petiolar area, the basal lateral areae therefore being confluent; there are three areae on the apical slope, the lateral keels of which are dilated near the top. Abdominal petiole dilated at the apex, the postpetiole not, however, separated; there are seven segments of equal width (except that the second is narrowed at the base); the ovipositor has a longish sheath, which projects obliquely over the top of the last segment, which is bluntly pointed; gastrocoeli broad, smooth, broader than the space separating them. Legs stout, the hind coxæ large, the tarsi spinose. Areolet 5-angled, narrowed in front; the discocubital nervure with an indication of a stump; the transverse median nervure interstitial. Head large, the temples broad, rounded; the occiput deeply incised.

The thorax is long, about three times longer than wide; the eyes are large, parallel; there is a short malar space; the transverse median nervure in the hind wings broken near

the bottom. The ventral keel extends to the apex of the fourth segment. Head large, wider than the thorax. Labrum hidden.

The edentate mandibles refer this genus to the Heresiarchini. It cannot well be confounded with any of the known genera in that group. The parapsidal furrows and that on the mesonotum are quite as distinct as they are in many Cryptinæ; but in other respects the genus belongs to the Ichneumoninæ. The antennæ are exactly as in the Joppini. Characteristic is the dilated at the base, clearly separated clypeus. In this respect the clypeus shows an approach to what it is in *Chiaglas*, an East-Indian genus belonging to the same group, but differing considerably otherwise.

Allonotus rufus, sp. n.

Rufous; the red on the second and following segments of the abdomen darker, more testaceous in colour; a broad band at the outer sides of the ocelli (continued as a narrower line in front of them), the second abdominal segment (except at the sides and apex), slightly more than the basal half of the third and fourth segments, the fifth (except narrowly at the apex), the sixth (except for a narrow white line at the apex), and the seventh (except for a wide white band in the middle), black; the petiole has the bright red colour of the thorax; the gastrocoeli pale rufous. Legs coloured like the thorax, except the apices of the four anterior tarsi broadly, the apex of the hind femora narrowly, and the hind tibiæ and tarsi, which are black. Antennæ with the scape rufous, the flagellum black, brownish at the base below, the middle with a broad white band. Wings hyaline, the stigma fuscous, the nervures black. ♀.

Length 10 mm.

Kuching; December (*Hewitt*).

Face and clypeus smooth, the former pilose, the latter bare; the rest of the head smooth and shining. Except the mesonotum (which is opaque and slightly shagreened), the thorax is smooth and shining, as is likewise the abdomen (except the second and third segments, which are slightly shagreened). The thorax is three times longer than wide; the scutellum is not raised above the mesonotum and is longer than wide; the metathorax is densely covered with a short pile.

[To be continued.]